CONTENTS

City of Philadelphia

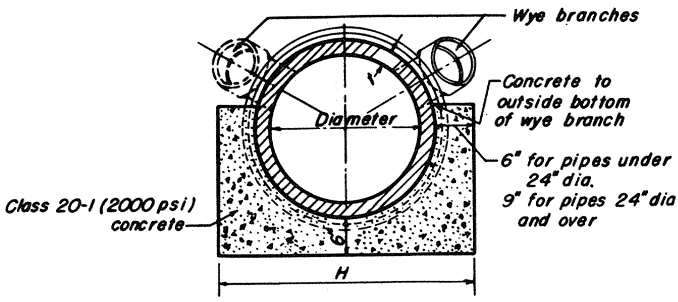
WATER DEPARTMENT

STANDARD DETAILS

FOR

SEWERS

1970



Dia	t*	H	Conc. C.Y./L.F.
10"	$\frac{7}{8}$"	$23\frac{3}{4}$"	0.056
12"	1"	2'-2"	0.067
15"	$1\frac{1}{4}$"	$2'-5\frac{5}{8}$"	0.084
18"	$1\frac{1}{2}$"	2'-9"	0.101
21"	$1\frac{3}{4}$"	$3'-0\frac{1}{2}$"	0.119
24"	2"	3'-10"	0.175
27"	$2\frac{1}{4}$"	$4'-1\frac{1}{2}$"	0.198
30"	$2\frac{1}{2}$"	4'-5"	0.223
36"	$2\frac{3}{4}$"	$4'-11\frac{1}{2}$"	0.270

*Standard strength

NOTES:

Vitrified Clay Pipe shall conform to ASTM C-13 for standard strength pipe and ASTM C-200 for extra strength pipe.

All joints shall have rubber gaskets and conform to ASTM C-425 Type III.

All spur, lateral and inlet connections shall be made with wye branches.

For Vitrified Clay Pipe, "Entirely Encased", extend Class 20-1 (2000 psi) concrete cradle as shown, to six (6) inches above top of pipe.

Kenneth J. Ritter
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

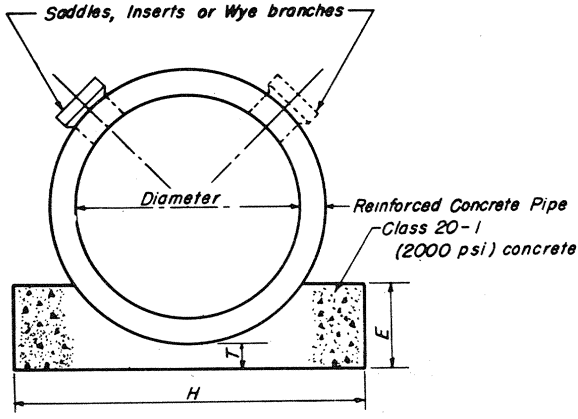
VITRIFIED CLAY PIPE SEWERS

CITY OF PHILADELPHIA WATER DEPARTMENT

D-1.0-S
DRAWING NO.

JUNE 1, 1970
DATE

PAGE NO. 1



Diameter	T	E	H	Conc. C.Y./L.F.
15"	4"	8½"	2'-7"	0.054
18"	4"	9"	2'-11"	0.064
21"	4"	10"	3'-3"	0.076
24"	4"	10½"	3'-6"	0.084
27"	4"	11"	3'-9"	0.093
30"	4"	12"	4'-1"	0.107
36"	4	13½"	4'-8"	0.132
42"	4"	14½"	5'-4"	0.161
48"	4½"	16"	6'-0"	0.201
54"	5"	17½"	6'-8"	0.245
60"	5½"	19"	7'-2"	0.284
66"	6"	21"	7'-9"	0.336
72"	6½"	23"	8'-4"	0.391

NOTES:

Reinforced concrete pipe shall conform to ASTM C-76.

Rubber Gaskets shall conform to ASTM C-443.

Lateral and inlet connections 10" dia. and under to be made with saddles or inserts.

Lateral and inlet connections 12" dia. and over in pipes 27" dia. and under shall be made with wye branches.

Lateral and inlet connections 12" dia. and over in pipes 30" dia. and over shall be made with saddles, inserts or wye branches.

All spur connections shall be made with wye branches.

For Reinforced Concrete Pipe, "Entirely Encased", extend Class 20-1(2000psi) concrete cradle as shown, to six(6) inches above top of pipe.

Kenneth J. Peterson
CHIEF DESIGN BRANCH

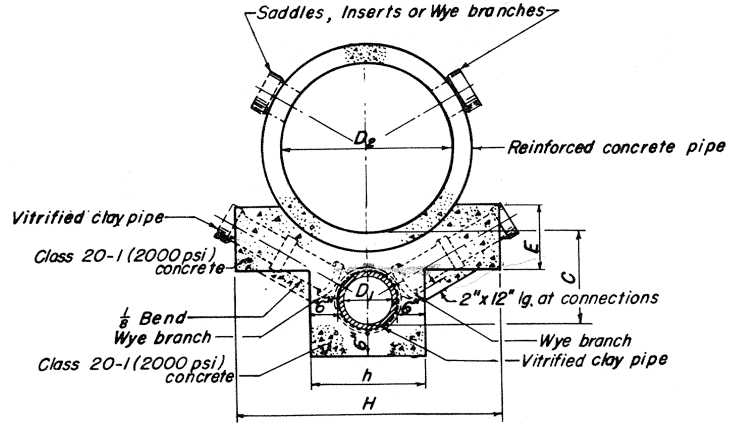
Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

R. C. PIPE SEWER AND STORMWATER CONDUIT

CITY OF PHILADELPHIA WATER DEPARTMENT

D-1.1-S
DRAWING NO.

JUNE 1, 1970
DATE



Size		h	H	E	C	Conc. C.Y./L.F.
D_1	D_2					
10"	15"	2'-3 3/4"	2'-7"	9 1/2"	1.51'	0.143
10"	18"		2'-11"	10"	1.53'	0.153
10"	21"		3'-3"	11"	1.55'	0.167
10"	24"		3'-6"	11 1/2"	1.57'	0.175
10"	27"		3'-9"	12 1/4"	1.59'	0.186
10"	30"		4'-1"	13"	1.61'	0.20
10"	36"		4'-8"	14 3/8"	1.64'	0.225
10"	42"		5'-4"	15"	2.04'	0.294
10"	48"		6'-0"	15 1/2"	2.04'	0.322
10"	54"	↓	6'-8"	16"	2.06'	0.353
12"	24"	2'-2"	3'-6"	11 1/2"	1.74'	0.189
12"	27"		3'-9"	12 1/4"	1.76'	0.199
12"	30"		4'-1"	13"	1.79'	0.214
12"	36"		4'-8"	14 1/4"	1.81'	0.237
12"	42"		5'-4"	15"	2.21'	0.307
12"	48"		6'-0"	15 1/2"	2.21'	0.335
12"	54"		6'-8"	16"	2.23'	0.366
12"	60"		7'-2"	16"	2.23'	0.382
12"	66"	↓	7'-9"	17"	2.23'	0.412

NOTES:

For additional required information see:

Drawing No. D-1.0-S VITRIFIED CLAY PIPE SEWERS
Drawing No. D-1.1-S R.C.PIPE SEWER AND STORMWATER CONDUIT

Kenneth J. Ritter
CHIEF DESIGN BRANCH

Samuel V. Baxter
COMMISSIONER & CHIEF ENGR.

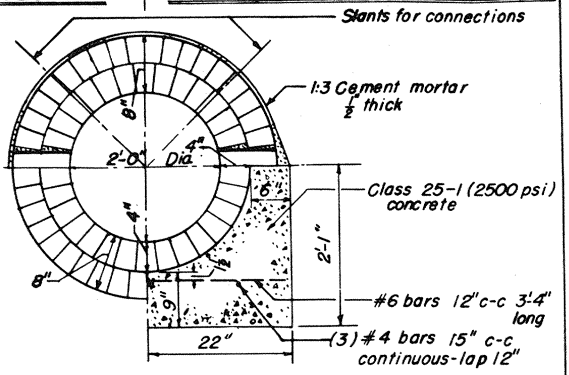
VIT. CLAY PIPE SEWER with R.C. PIPE S.W. CONDUIT

CITY OF PHILADELPHIA WATER DEPARTMENT

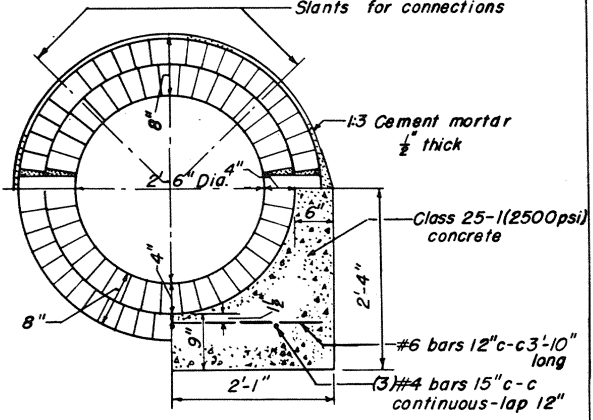
D-1.2-S DRAWING NO.
JUNE 1, 1970 DATE
PAGE NO. 3

HALF MINIMUM SECTION — HALF REDUCED CRADLE SECTION

2'-0" DIA.



2'-6" DIA.

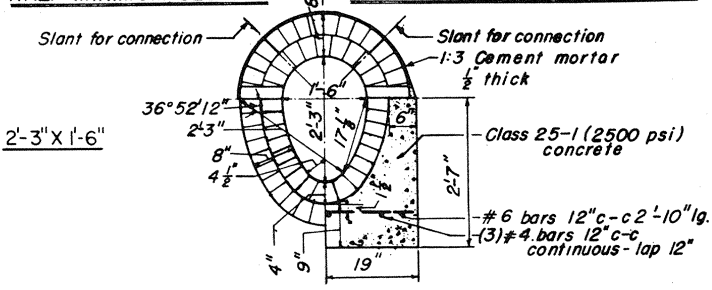


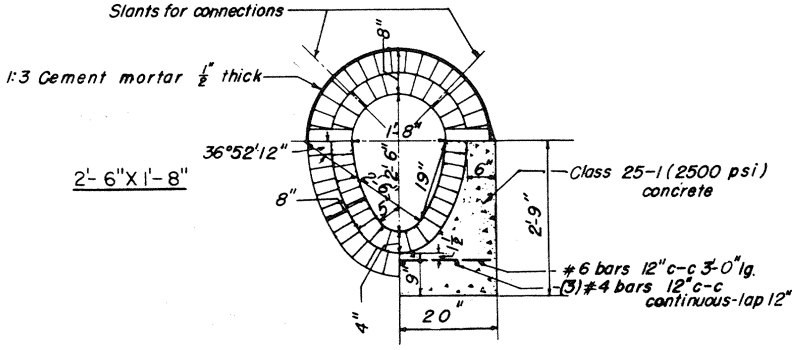
NOTES:

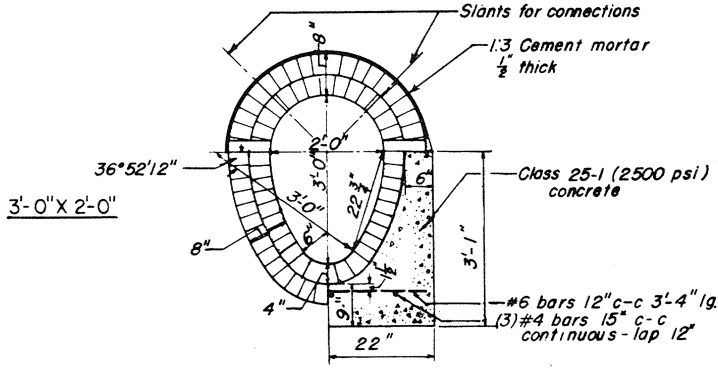
Brick shall conform to ASTM C-32
Reinforcing Bars shall conform to ASTM A-615 Grade 40.

Kenneth J. Fitzmaurice CHIEF DESIGN BRANCH Samuel S. Baxter COMMISSIONER & CHIEF ENGR.	CIRCULAR BRICK SEWERS CITY OF PHILADELPHIA WATER DEPARTMENT	D-1.3-S DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 4

HALF MINIMUM SECTION — HALF REDUCED CRADLE SECTION







NOTES:
Brick shall conform to ASTM C-32
Reinforcing bars shall conform to ASTM A-615 Grade 40

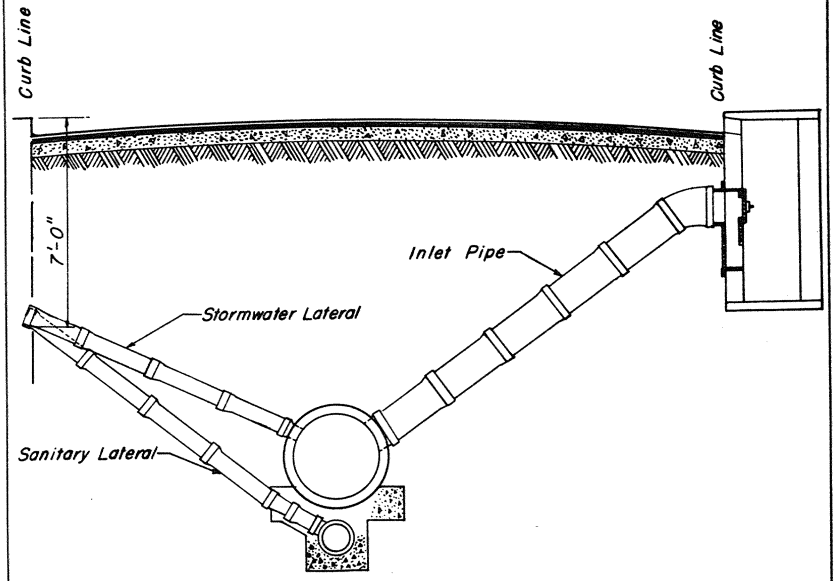
Kenneth J. Ritsmen
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

EGG-SHAPED BRICK SEWERS

CITY OF PHILADELPHIA WATER DEPARTMENT

D-1.4-S
DRAWING NO.
JUNE 1, 1970
DATE
PAGE NO. 5



PIPES NOT IN CONCRETE

Dia.	Trench width
6" & under	18"
5" with 6"	2'-8"
8" to 21"	ID + 16"
24" & over	ID + 24"

NOTE:
Lateral and inlet pipes shall have direct fall to sewer or stormwater conduit.
Laterals and inlet pipes shall be laid on undisturbed ground.
Vitrified Clay PIPE laterals and inlet connections shall conform to ASTM C-13 for standard strength pipe and ASTM C-200 for extra strength pipe.
All joints shall have rubber gaskets and conform to ASTM C-425 Type III.

Kenneth J. Zitomer
CHIEF DESIGN BRANCH

Samuel V. Baxter
COMMISSIONER & CHIEF ENGR.

LATERALS for SEPARATE SYSTEM

CITY OF PHILADELPHIA WATER DEPARTMENT

D-2.0-L
DRAWING NO.

JUNE 1, 1970
DATE

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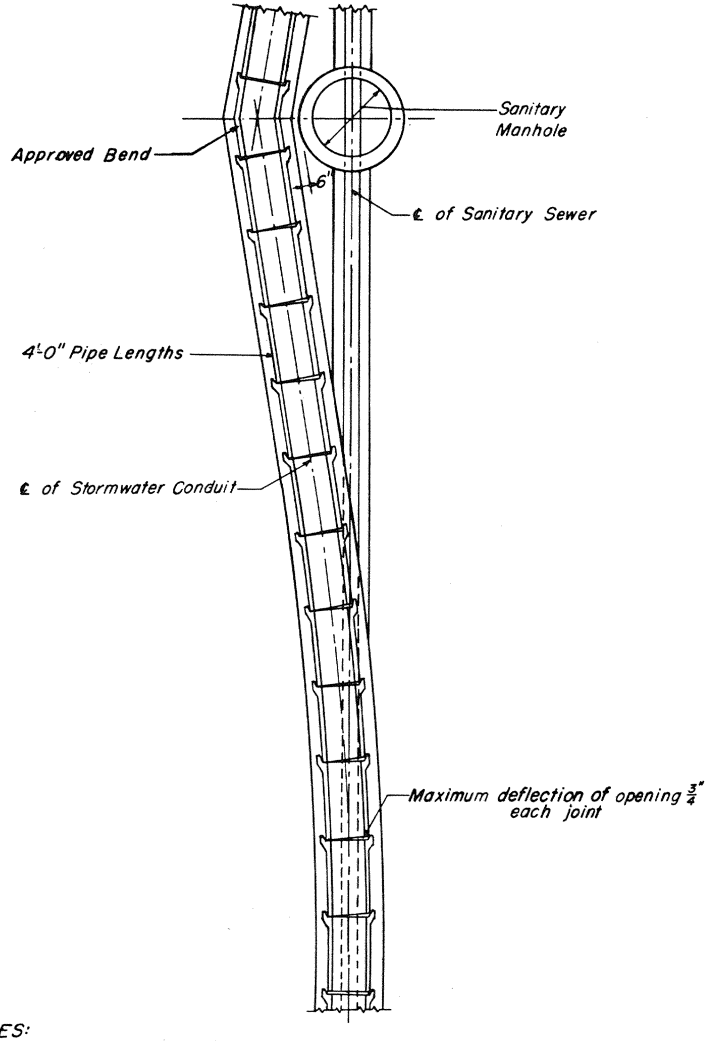


NOTES:

For details and dimensions not shown, see:

Drawing No. D-1.0-S	VITRIFIED CLAY PIPE SEWERS
Drawing No. D-1.1-S	R.C. PIPE SEWER AND STORMWATER CONDUIT
Drawing No. D-1.2-S	VIT. CLAY PIPE SEWER WITH R.C. PIPE S.W. CONDUIT

Kenneth J. Fitzsimmons
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

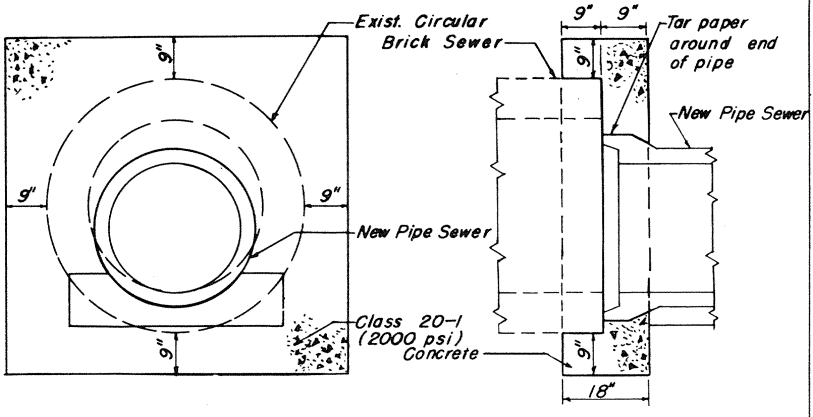
TURNOUT FOR STORMWATER CONDUIT

CITY OF PHILADELPHIA WATER DEPARTMENT

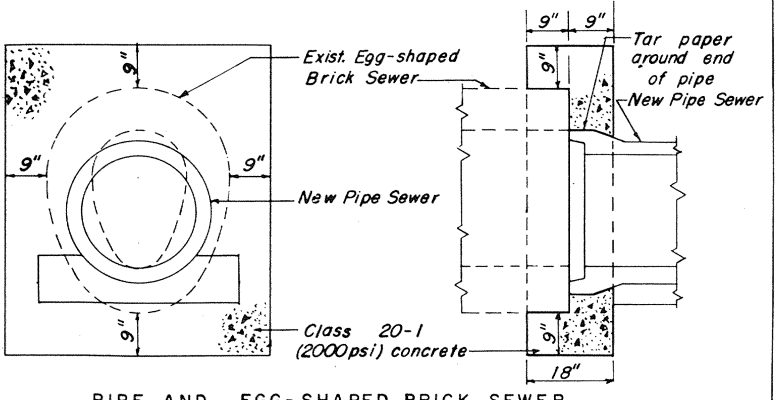
D-3.0-T
DRAWING NO.

JUNE 1, 1970
DATE

PAGE NO. 7



PIPE AND CIRCULAR BRICK SEWER

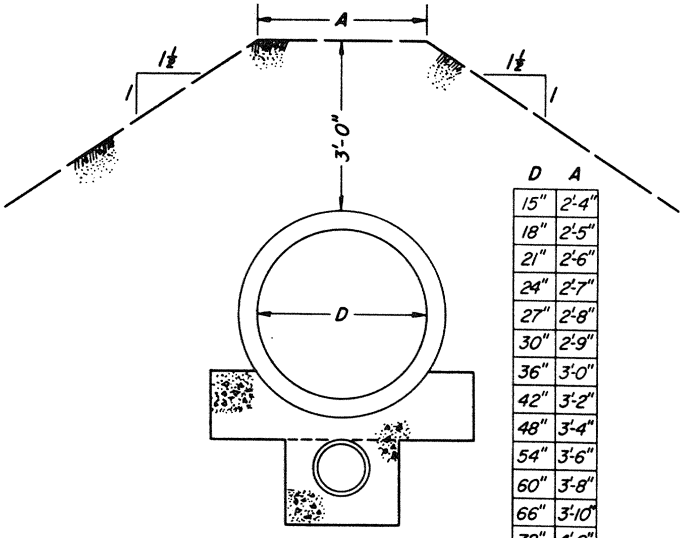


PIPE AND EGG-SHAPED BRICK SEWER

NOTES:

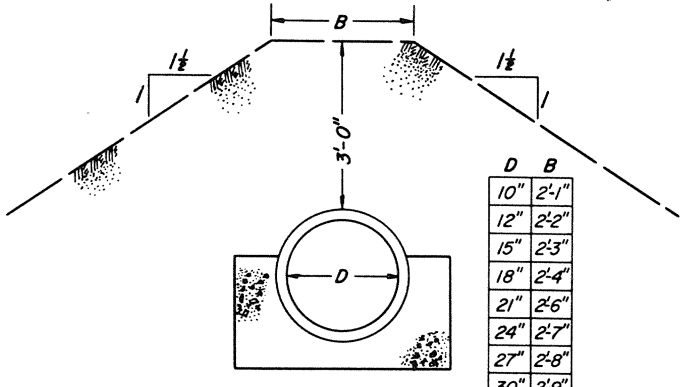
Remove existing cradle to the extent necessary for construction of concrete collar.
Class 20-1(2000psi) concrete fillet in invert to spring line as required.
Where outside surface of new sewer extends beyond existing sewer, the 9" dimension shall be from the new sewer.

Kenneth J. Peterson CHIEF DESIGN BRANCH Samuel S. Baxter COMMISSIONER & CHIEF ENGR.	CONCRETE COLLARS AT CONNECTIONS CITY OF PHILADELPHIA WATER DEPARTMENT	D-4.0-C DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 8



D	A
15"	2'-4"
18"	2'-5"
21"	2'-6"
24"	2'-7"
27"	2'-8"
30"	2'-9"
36"	3'-0"
42"	3'-2"
48"	3'-4"
54"	3'-6"
60"	3'-8"
66"	3'-10"
72"	4'-0"

VIT. CLAY PIPE SEWER WITH R.C. PIPE S.W. CONDUIT
OR
R.C. PIPE SEWER AND STORMWATER CONDUIT



D	B
10"	2'-1"
12"	2'-2"
15"	2'-3"
18"	2'-4"
21"	2'-6"
24"	2'-7"
27"	2'-8"
30"	2'-9"
36"	2'-11"

VIT. CLAY PIPE SEWER

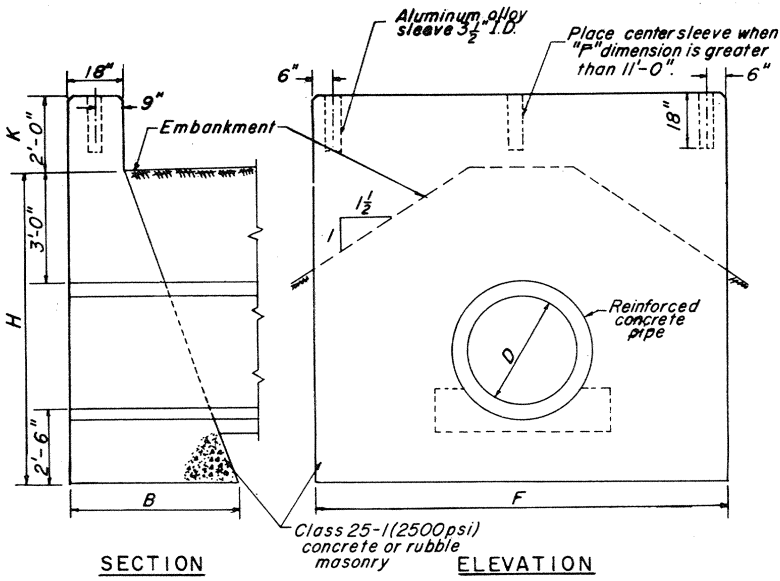
Kenneth J. Jensen
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

EMBANKMENT OVER PIPES

CITY OF PHILADELPHIA WATER DEPARTMENT

D-5.0-E
DRAWING NO.
JUNE 1, 1970
DATE



Headwall Dimensions				
D	H+K	B	F	Cu. Yds.
15"	8'-11¼"	3'-2"	7'-0"	4.79
18"	9'-2¼"	3'-3"	8'-0"	5.70
21"	9'-5¾"	3'-4"	8'-6"	6.28
24"	9'-9"	3'-6"	9'-0"	6.99
27"	10'-0¼"	3'-7"	9'-6"	7.63
30"	10'-3½"	3'-9"	10'-0"	8.42
36"	10'-10"	4'-0"	11'-0"	10.00
42"	11'-4½"	4'-3"	12'-0"	11.73
48"	11'-11"	4'-6"	13'-0"	13.64
54"	12'-5½"	4'-9"	14'-0"	15.71
60"	13'-0"	5'-0"	15'-0"	17.96
66"	13'-6½"	5'-3"	16'-0"	20.39
72"	14'-2"	5'-6"	17'-0"	23.23

NOTES:

For details and dimensions not shown, see:
Drawing No. D-5.0-E EMBANKMENT OVER PIPES.
Drawing No. D-6.1-HWF CHAIN LINK FENCE ALUMINUM.

All exposed edges shall have a 1" chamfer.
Headwall to be constructed of rubble masonry where required.
Aluminum alloy sleeves shall conform to ASTM B-241.

Kenneth J. Fitzsimons
CHIEF DESIGN BRANCH

Samuel V. Baxter
COMMISSIONER & CHIEF ENGR.

CONCRETE HEADWALL

CITY OF PHILADELPHIA WATER DEPARTMENT

D-6.0-HW
DRAWING NO.
JUNE 1, 1970
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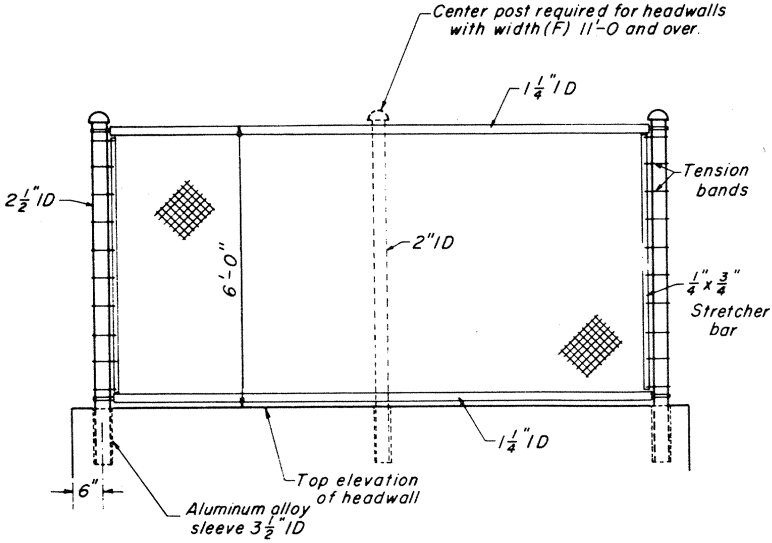

NOTES:

For details and dimensions of CONCRETE HEADWALL see Drawing No. D-6.0-HW.
Posts, rails and couplings shall conform to ASTM B-241.
Fabric, wire ties, nuts, bolts and rivets shall conform to ASTM B-211.
Stretcher bars and thrust rods shall conform to ASTM B-221.
Castings shall conform to ASTM B-26.
Fabric shall be 2" mesh.
All members shall be Phosphate Chromate finished.
Aluminum alloy sleeve shall be filled with 1:2 cement mortar after installation of post.

Kenneth J. Fitzsimmons
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

CHAIN LINK FENCE ALUMINUM

CITY OF PHILADELPHIA WATER DEPARTMENT

D-6.1-HWF
DRAWING NO.
JUNE 1, 1970
DATE
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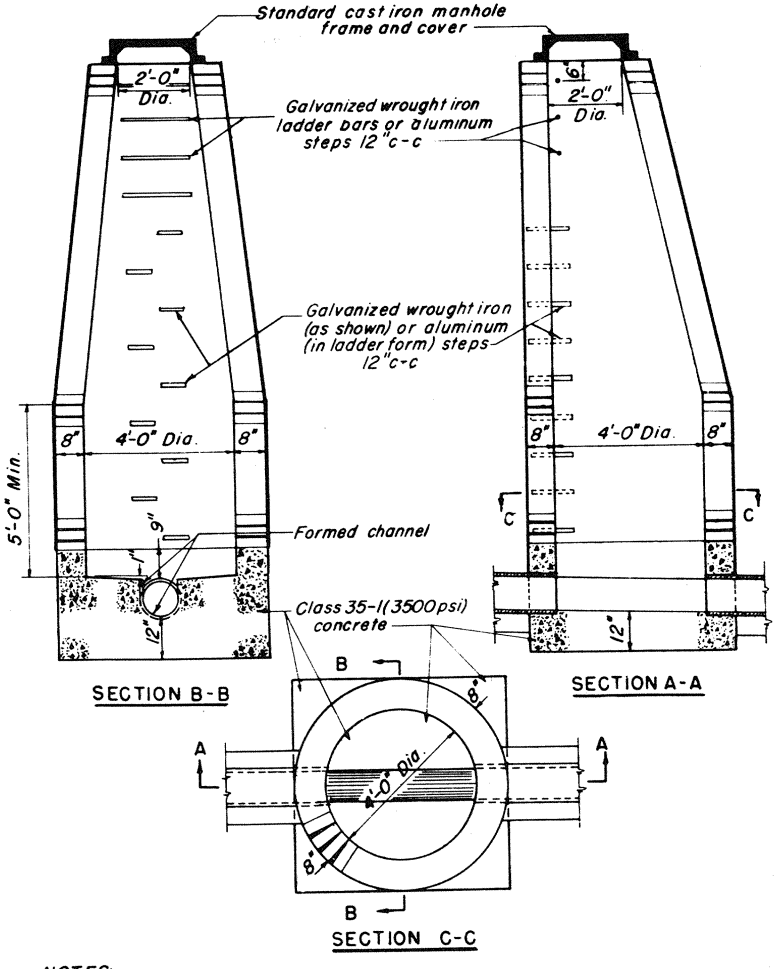


NOTES:

For details and dimensions not shown see:
Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (Closed Cover for Sanitary - Vented Cover for Stormwater).
D-11.1-MC MANHOLE STEPS AND LADDER BAR, (Wrought iron or Aluminum).
Brick shall conform to ASTM C-32.
Brick walls shall be 8" thick to a depth of 15'-12" thick between 15' and 35'-16" thick below 35', (increase concrete base section as required).
Plaster exterior brickwork with 1:3 cement mortar $\frac{1}{2}$ thick.

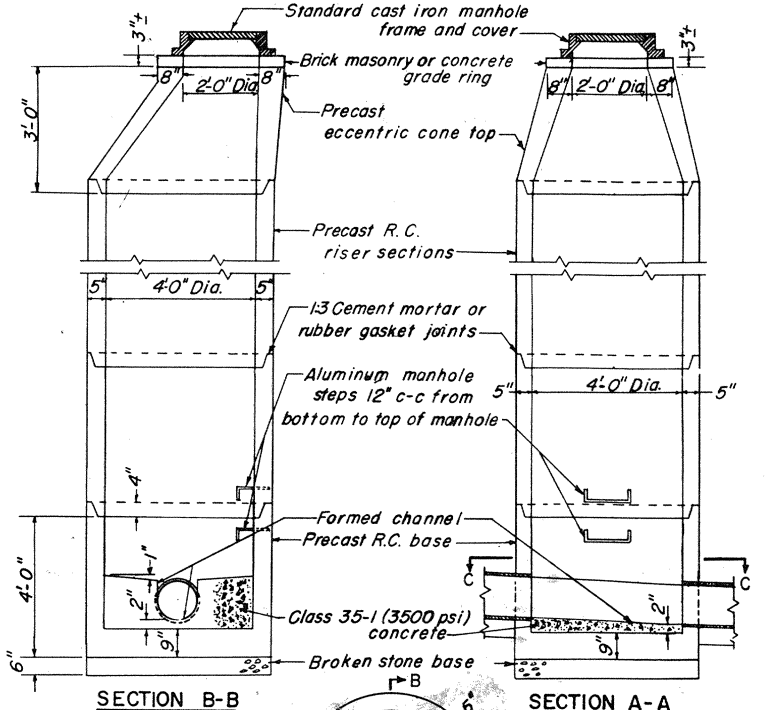
Kenneth J. Zitomer
CHIEF DESIGN BRANCH

Samuel V. Baxter
COMMISSIONER & CHIEF ENGR.

BRICK MANHOLE FOR SEWERS 30" DIA. AND UNDER

CITY OF PHILADELPHIA WATER DEPARTMENT

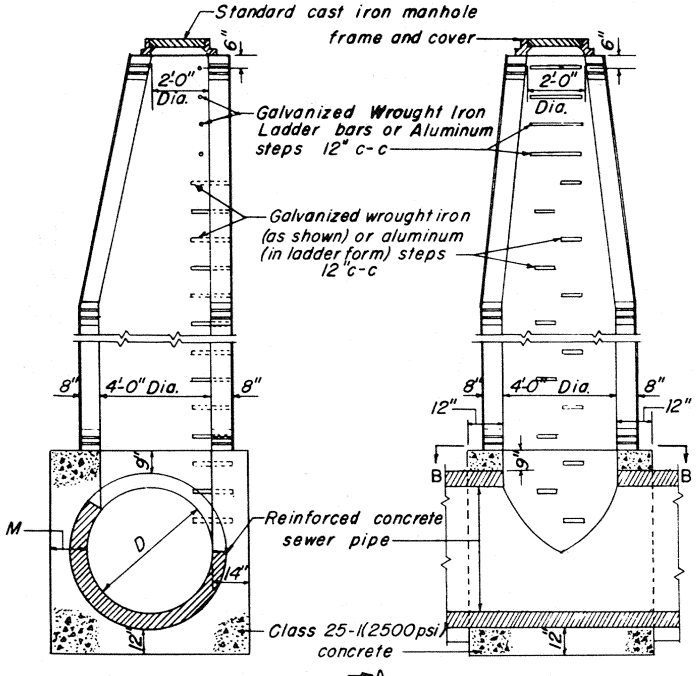
D-7.0-M
DRAWING NO.
JUNE 1, 1970
DATE
PAGE NO. 12



NOTES:

For details and dimensions not shown see:
Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (Closed for Sanitary—Vented for Stormwater.)
Drawing No. D-11.1-MC MANHOLE STEPS AND LADDER BAR, (Aluminum).
Precast R.C. eccentric cone top, riser sections and base section shall conform to ASTM C-478.
Rubber gaskets shall conform to ASTM C-443.
Pipe openings in precast base shall be made by the manufacturer.

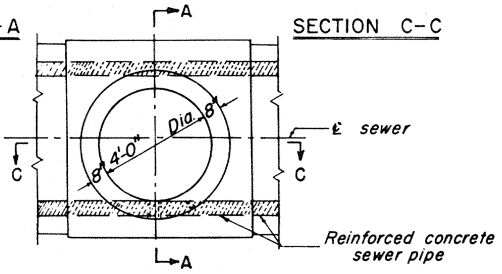
Kenneth J. Zitomer CHIEF DESIGN BRANCH Samuel V. Boster COMMISSIONER & CHIEF ENGR.	PRECAST R.C. MANHOLE with PRECAST R.C. BASE for SEWERS 30" DIA. & UNDER CITY OF PHILADELPHIA WATER DEPARTMENT	D-7.1-M DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 13



SECTION A-A

SECTION C-C

D	M
36"	26"
42"	20"
48" to 72"	14"



SECTION B-B

NOTES:

For details and dimensions not shown, see:

Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (Closed for Sanitary - Vented for Stormwater)

Drawing No. D-11.1-MC MANHOLE STEPS AND LADDER BAR (Wrought Iron or Aluminum)

Drawing No. D-1.1-S R.C. PIPE SEWER AND STORMWATER CONDUIT

Brick walls shall be 8" thick to a depth of 15', 12" thick between 15' and 35'.
Brick shall conform to ASTM C-32.
Plaster exterior brickwork with 1:3 cement mortar $\frac{1}{2}$" thick.

Kenneth J. Fitzmaurice
CHIEF DESIGN BRANCH

Samuel C. S. Baxter
COMMISSIONER & CHIEF ENGR.

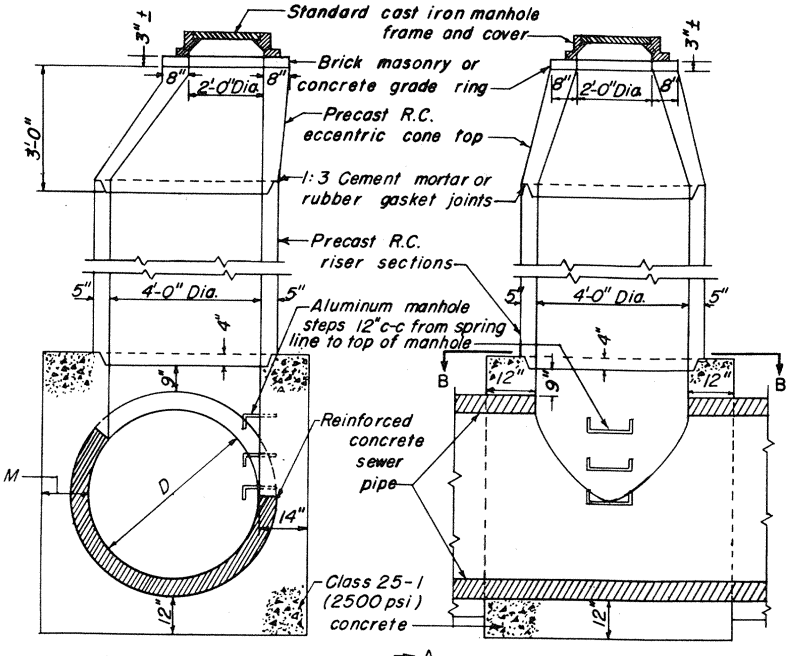
BRICK MANHOLE for SEWERS 36" DIA. & OVER

CITY OF PHILADELPHIA WATER DEPARTMENT

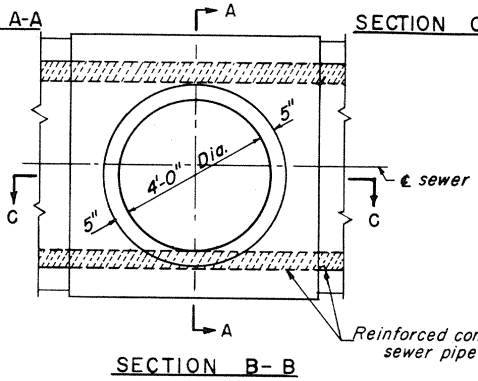
D-7.2-M
DRAWING NO.

JUNE 1, 1970
DATE

PAGE NO. 14



D	M
36"	26"
42"	20"
48" to 72"	14"



SECTION B-B

NOTES:

For details and dimensions not shown, see:

Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (Closed for Sanitary — Vented for Stormwater)

Drawing No. D-11.1-MC MANHOLE STEPS AND LADDER BAR (Alumimum)

Drawing No. D-1.1-S R.C. PIPE SEWER AND STORMWATER CONDUIT.

Precast R.C. eccentric cone top and riser sections shall conform to ASTM C-478.

Rubber gaskets shall conform to ASTM C-443.

Kenneth J. Brown
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

PRECAST R.C. MANHOLE for SEWERS 36" DIA. & OVER

CITY OF PHILADELPHIA WATER DEPARTMENT

D-7.3-M
DRAWING NO.

JUNE 1, 1970
DATE

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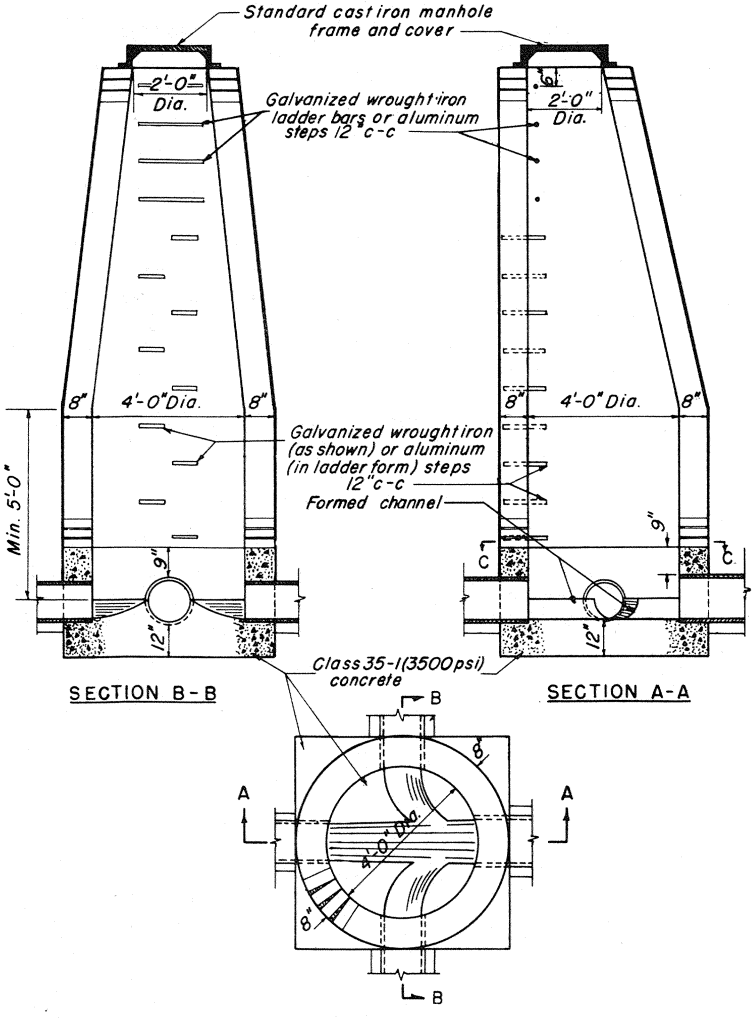
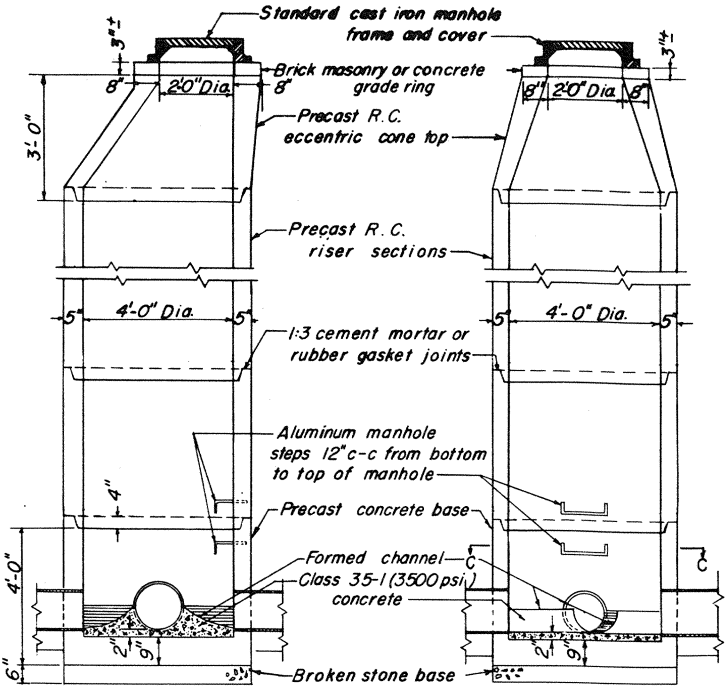


NOTES:

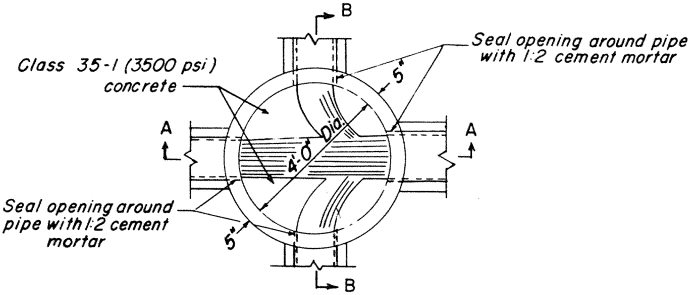
For details and dimensions not shown, see:
Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (closed for sanitary-vented for stormwater).
Drawing No. D-11.1-MC MANHOLE STEPS AND LADDER BAR (Wrought iron or Aluminum).
Brick shall conform to ASTM C-32.
Brickwork shall be 8" thick to a depth of 15', 12" thick between 15' and 35' and 16" thick below 35' (increase concrete base section as required).
Plaster exterior brickwork with 1:3 cement $\frac{1}{2}$" thick.

Kenneth J. Fitzmaurice CHIEF DESIGN BRANCH Samuel V. Baxter COMMISSIONER & CHIEF ENGR.	BRICK JUNCTION MANHOLE CITY OF PHILADELPHIA WATER DEPARTMENT	D-7.4-M DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 16



SECTION B-B

SECTION A-A



SECTION C-C

NOTES:

For details and dimensions not shown see:

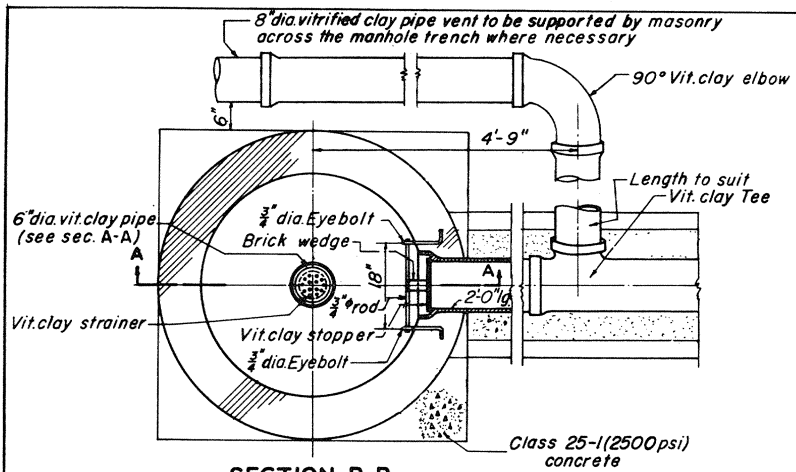
Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (Closed for Sanitary — Vented for Stormwater)

Drawing No. D-11.1-MC MANHOLE STEPS AND LADDER BAR, (Aluminum).

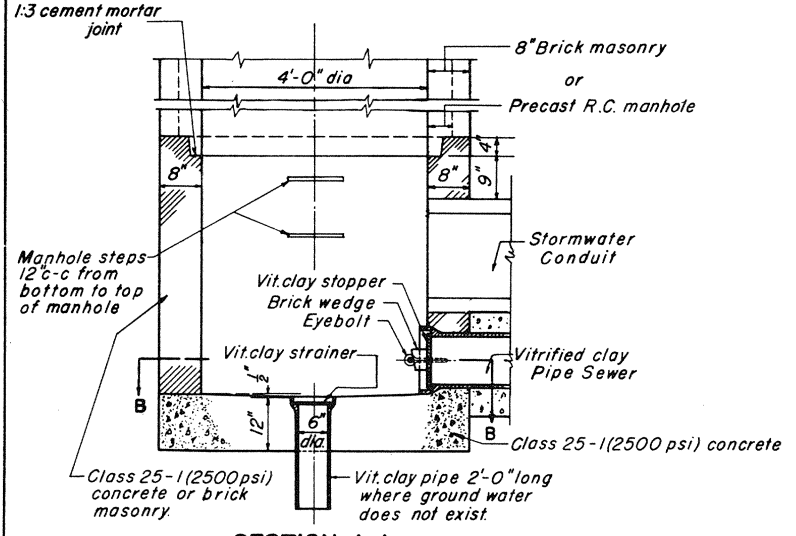
Precast R.C. eccentric cone top, riser sections and base section shall conform to ASTM C-478

Rubber gaskets shall conform to ASTM C-443.

Kenneth J. Fitzsimons CHIEF DESIGN BRANCH Samuel S. Baxter COMMISSIONER & CHIEF ENGR.	PRECAST R.C. JUNCTION MANHOLE with PRECAST R.C. BASE CITY OF PHILADELPHIA WATER DEPARTMENT	D-7.5-M DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 17



SECTION B-B



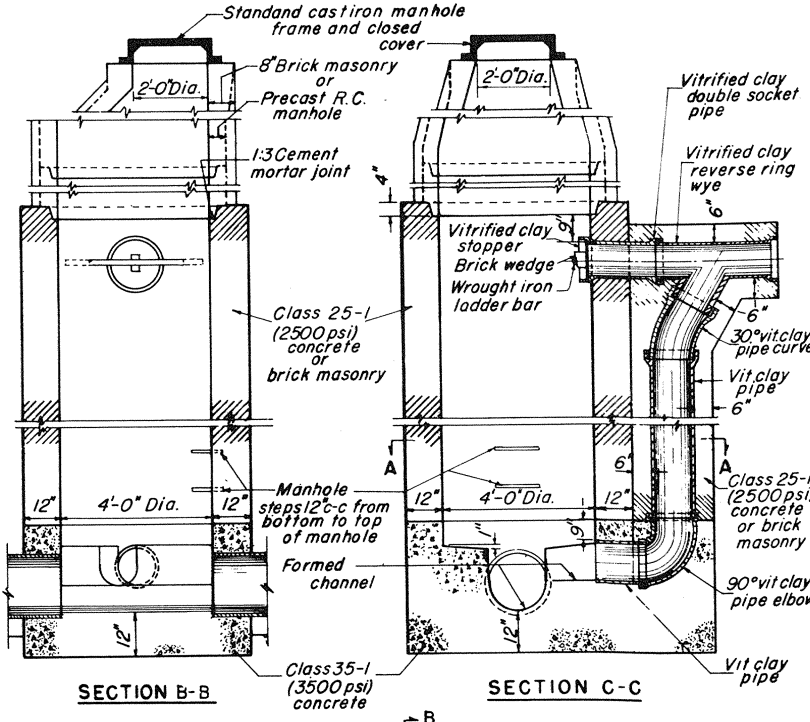
SECTION A-A

NOTES:

For details and dimensions not shown, see:
- Drawing No. D-7.0-M BRICK MANHOLE FOR SEWERS 30" DIA. AND UNDER.
- Drawing No. D-7.1-M PRECAST R.C. MANHOLE WITH PRECAST R.C. BASE FOR SEWERS 30" DIA. AND UNDER.
- Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (Closed).
- Drawing No. D-11.1-MC MANHOLE STEPS AND LADDER BAR (Wrought iron or Aluminum).

Eyebolts and rod shall be wrought iron ASTM A-207 and galvanized according to ASTM A-123.
Plaster exterior brickwork with 1:3 cement mortar 1/2" thick.
Brick shall conform to ASTM C-32.
At summit locations construction must be similar at opposite side of manhole.

Kenneth J. Fitzmaurice CHIEF DESIGN BRANCH Samuel S. Baxter COMMISSIONER & CHIEF ENGR.	SPECIAL MANHOLE CITY OF PHILADELPHIA WATER DEPARTMENT	D-8.0-SM DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 18



NOTES:

For details and dimension not shown, see:

Drawing No. D-7.0-M	BRICK MANHOLE FOR SEWERS 30" DIA. & UNDER.
Drawing No. D-7.1-M	PRECAST R.C. MANHOLE FOR SEWERS 30" DIA & UNDER.
Drawing No. D-11.0-MC	CAST IRON MANHOLE FRAME AND COVER (closed).
Drawing No. D-11.1-MC	MANHOLE STEPS AND LADDER BAR (Wrought iron or Aluminum).

Brick shall conform to ASTM C-32
Wrought iron bar shall conform to ASTM A-207.
Plaster exterior brickwork with 1:3 cement mortar ½" thick.
Drop sewer pipe & upper level sewer pipe shall be same diameter.

Kenneth J. Zitomer
CHIEF DESIGN BRANCH

Samuel V. Baxter
COMMISSIONER & CHIEF ENGR.

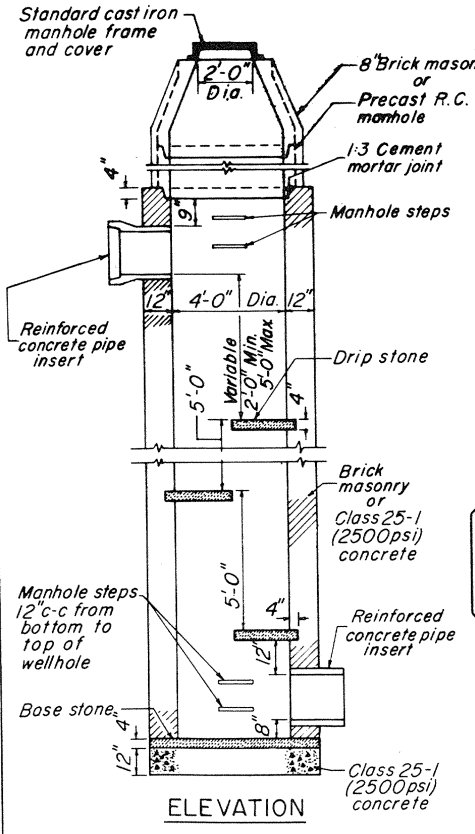
DROP MANHOLE BRICK OR CONCRETE

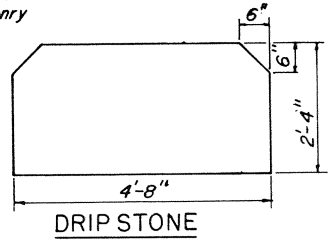
CITY OF PHILADELPHIA WATER DEPARTMENT

D-9.0-DM
DRAWING NO.

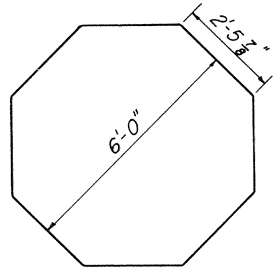
JUNE 1, 1970
DATE

PAGE NO. 19





DRIP STONE



BASE STONE

Notes:

Wellhole as shown, for reinforced concrete pipe 42" dia. and under.

For details and dimensions not shown, see:

Drawing No. D-7.0-M BRICK MANHOLE FOR SEWERS 30" DIA. & UNDER.

Drawing No. D-7.1-M PRECAST R.C. MANHOLE FOR SEWERS 30" DIA. & UNDER.

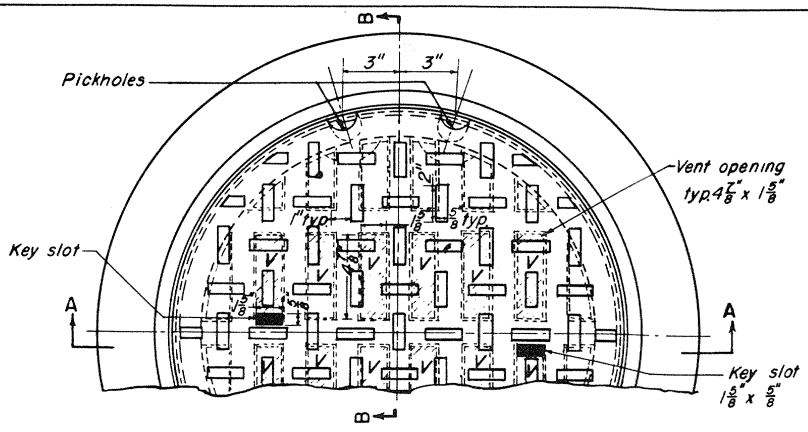
Drawing No. D-11.0-MC CAST IRON MANHOLE FRAME AND COVER (Vented).

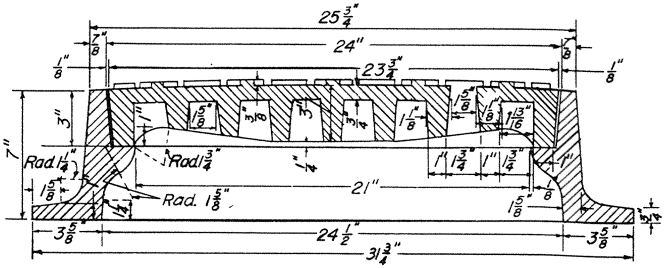
Drawing No. D-11.1-MC MANHOLE STEPS AND LADDER BAR, (Wrought iron or Aluminum).

Drip stones and base stone shall be Scioto Valley stone, Mc Dermott Ohio.

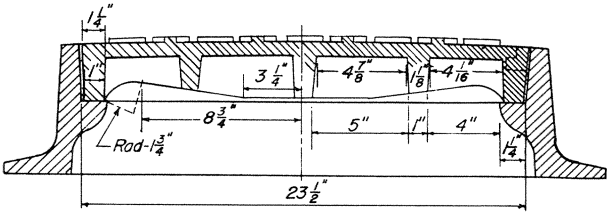
Plaster exterior brickwork with 1:3 cement mortar ½" thick

Kenneth J. Zimmerman CHIEF DESIGN BRANCH Samuel S. Baxter COMMISSIONER & CHIEF ENGR.	WELLHOLE BRICK or CONCRETE CITY OF PHILADELPHIA WATER DEPARTMENT	D-10.0-W DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 20



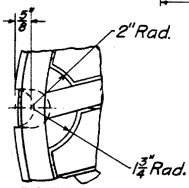


SECTION A-A

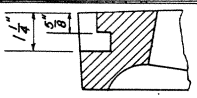


SECTION B-B

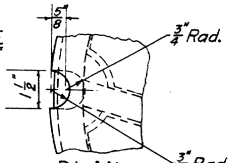
DETAILS OF PICKHOLE



BOTTOM VIEW



SECTION THRU ℄

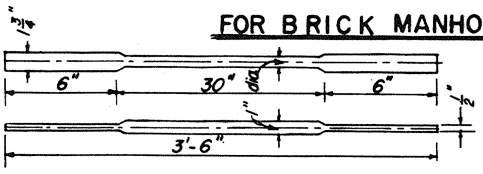


PLAN

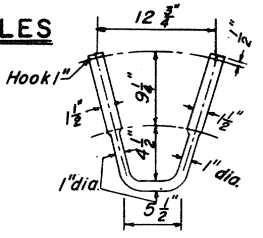
NOTES:
Cast iron shall conform to ASTM A-48 class 30.
For ventilating covers provide 12 vent openings dimensioned and located as shown.

Kenneth J. Fitzsimons CHIEF DESIGN BRANCH Samuel V. Baxter COMMISSIONER & CHIEF ENGR.	CAST IRON MANHOLE FRAME & COVER CITY OF PHILADELPHIA WATER DEPARTMENT	D-11.0-MC DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 21

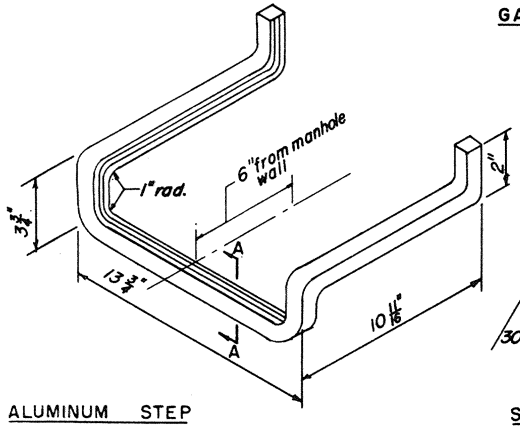
FOR BRICK MANHOLES



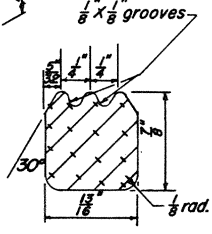
WROUGHT IRON LADDER BAR
GALVANIZED



WROUGHT IRON STEP
GALVANIZED

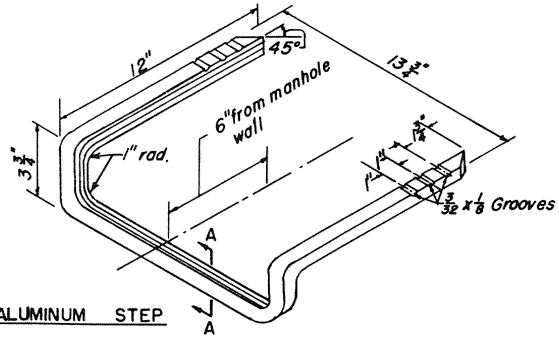


ALUMINUM STEP



SECTION A-A

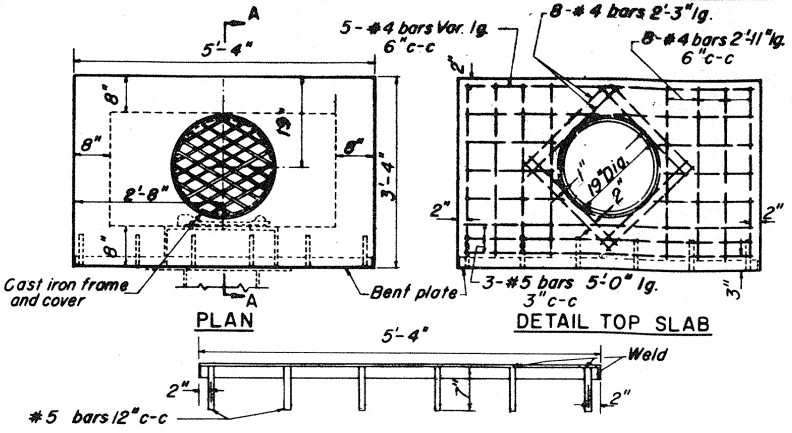
FOR CONCRETE OR PRECAST R. C. MANHOLES



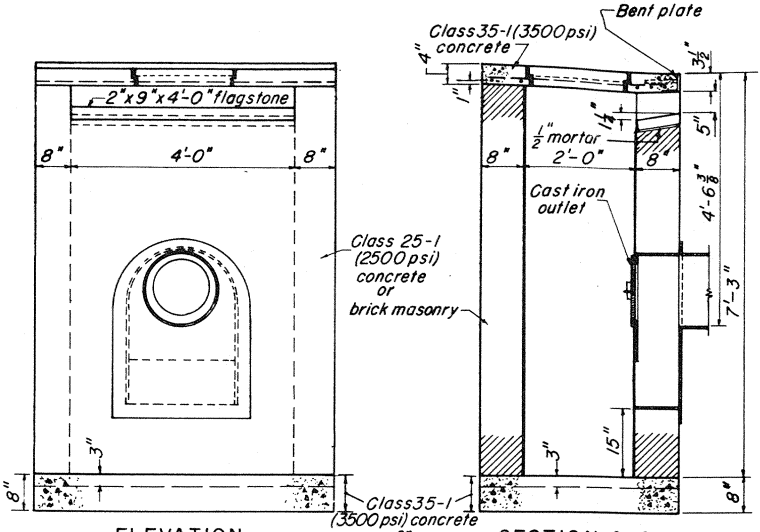
ALUMINUM STEP

NOTES:
Wrought iron shall conform to ASTM A-207, galvanizing shall conform to ASTM A-123.
Aluminum shall conform to ASTM B-221 Alloy 6061 T-6.
Embedded ends of Aluminum steps shall have two(2) coats of bitumastic.

Kenneth J. Zitomer CHIEF DESIGN BRANCH Samuel V. Baxter COMMISSIONER & CHIEF ENGR.	**MANHOLE STEPS AND LADDER BAR** CITY OF PHILADELPHIA WATER DEPARTMENT	D-11.1-MC DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 22



DETAIL $3\frac{1}{2}" \times 3\frac{1}{2}" \times \frac{3}{8}"$ BENT STEEL PLATE & ANCHORS



NOTES:

For details and dimensions of Cast Iron Outlet and Cast Iron Frame & Cover see Drawing No. D-13.0-IC INLET CASTINGS.

Brick shall conform to ASTM C-32.

Reinforcing bars shall conform to ASTM A-615 grade 40.

Flagstone shall be Scioto Valley stone, Mc Dermott Ohio.

Bent steel plate shall conform to ASTM A-283 grade C. Bent plate only shall be galvanized conforming to ASTM A-123 after assembly.

Plaster interior brickwork with 1:2 cement mortar ½" thick.

Outlet may be placed in any wall as required.

Kenneth J. Fitzmaurice
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

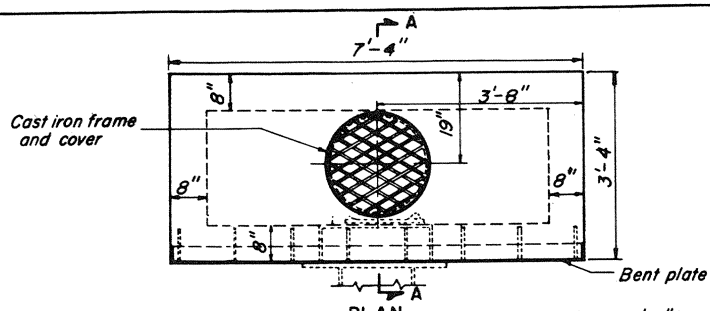
4 FT. CITY INLET

CITY OF PHILADELPHIA WATER DEPARTMENT

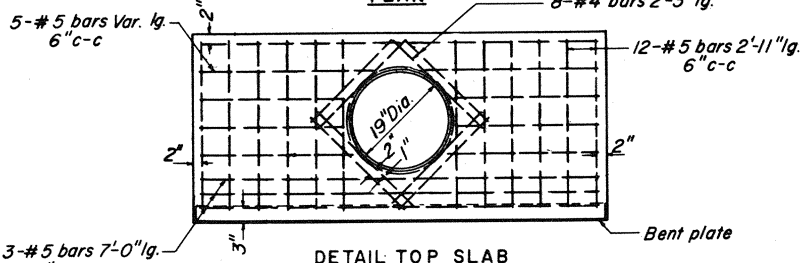
D-12.0-I
DRAWING NO.

JUNE 1, 1970
DATE

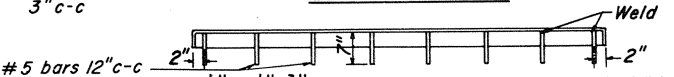
PAGE NO. 23



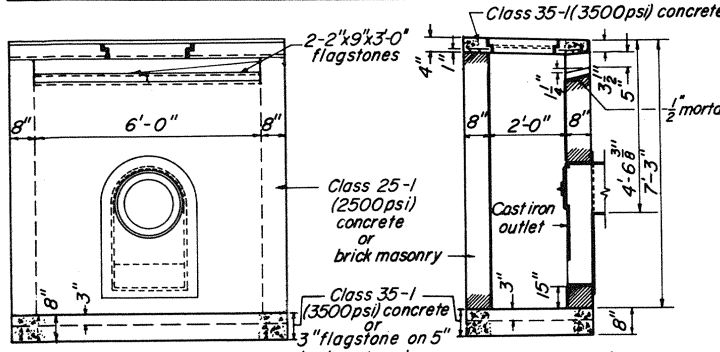
PLAN



DETAIL TOP SLAB



DETAIL $3\frac{1}{2}$"x $3\frac{1}{2}$"x $\frac{3}{8}$" BENT STEEL PLATE & ANCHORS



ELEVATION SECTION A-A

NOTES:

For details and dimensions of Cast Iron Outlet and Cast Iron Frame & Cover see Drawing No. D-13.0-IC INLET CASTINGS.

Brick shall conform to ASTM C-32.

Reinforcing bars shall conform to ASTM A-615 grade 40.

Flagstone shall be Scioto Valley stone, Mc Dermott Ohio.

Bent steel plate shall conform to ASTM A-283 grade C. Bent plate only shall be galvanized conforming to ASTM A-123 after assembly.

Plaster interior brickwork with 1:2 cement mortar $\frac{1}{2}$" thick.

Outlet may be placed in any wall as required.

Kenneth J. Zimmer
CHIEF DESIGN BRANCH

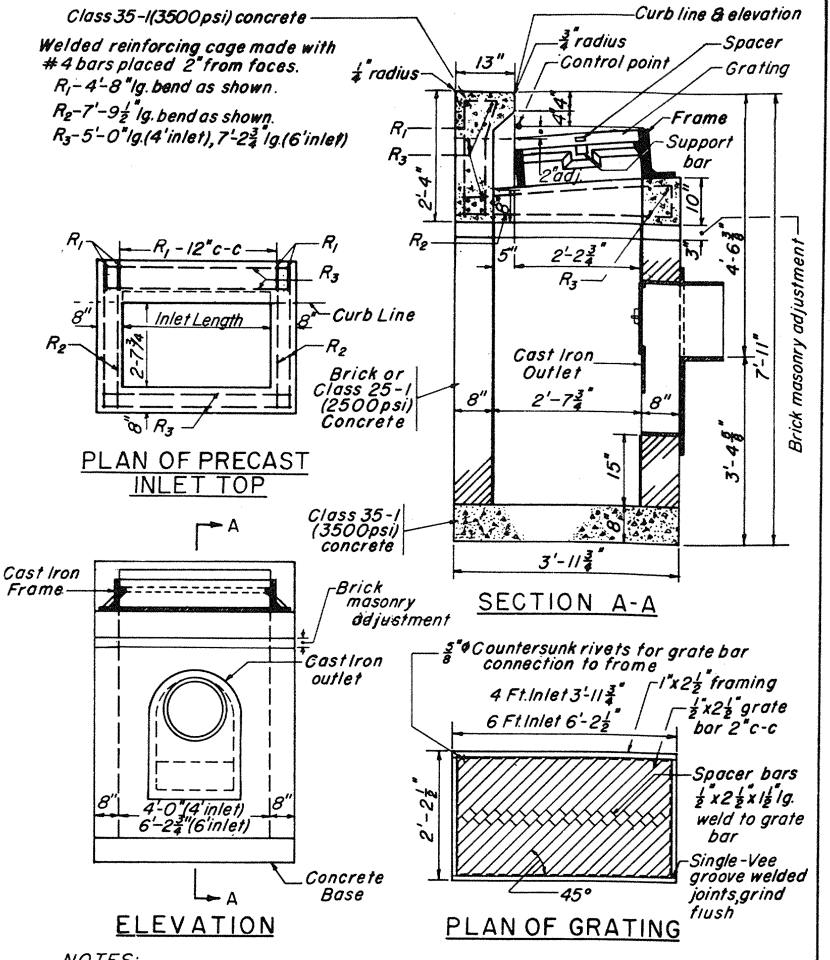
Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

6 FT. CITY INLET

CITY OF PHILADELPHIA WATER DEPARTMENT

D-12.1-I
DRAWING NO.

JUNE 1, 1970
DATE



NOTES:

For details and dimensions of Cast Iron Outlet see Drawing No. D-13.0-IC.

INLET CASTINGS.

Brick shall conform to ASTM C-32

Reinforcing bars shall conform to ASTM A-615 grade 40.

Inlet frame shall be gray iron ASTM A-48 class 30 or ductile iron ASTM A-536.

Grate frame, grate bars, spacer bars and support bar shall be wrought iron ASTM A-207 or structural grade steel ASTM A-36.

Members of fabricated grating shall be joined by riveting as shown or by approved welding.

Grating shall be placed in frame so that the gutter flow is directed toward the curb line.

Plaster interior brickwork with 1:2 cement mortar 1/2" thick.

Outlet may be placed in any wall as required.

Kenneth J. Zitomer
CHIEF DESIGN BRANCH

Samuel V. Baxter
COMMISSIONER & CHIEF ENGR.

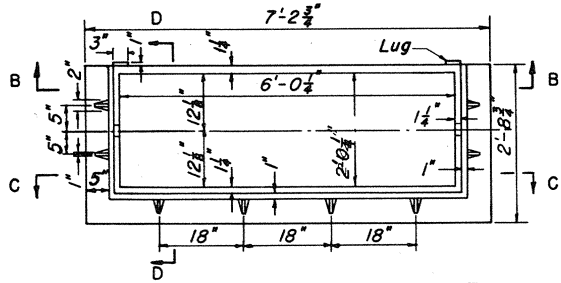
4FT. & 6FT. OPEN MOUTH GRATE INLET WITH PRECAST TOP

CITY OF PHILADELPHIA WATER DEPARTMENT

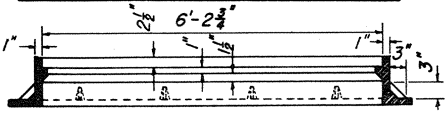
D-12.2A-I
DRAWING NO.

JUNE 1, 1970
DATE

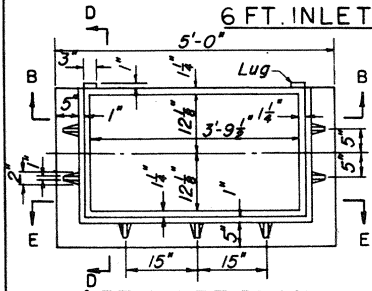
PAGE NO. 25



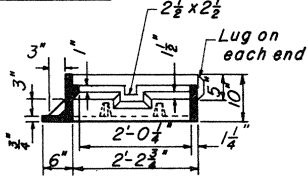
6 FT. INLET PLAN OF FRAME



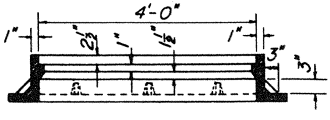
6 FT. INLET SECTION C-C



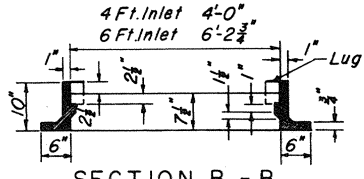
4 FT. INLET PLAN OF FRAME



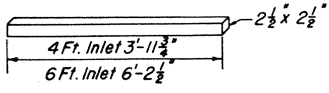
SECTION D-D



4 FT. INLET SECTION E-E



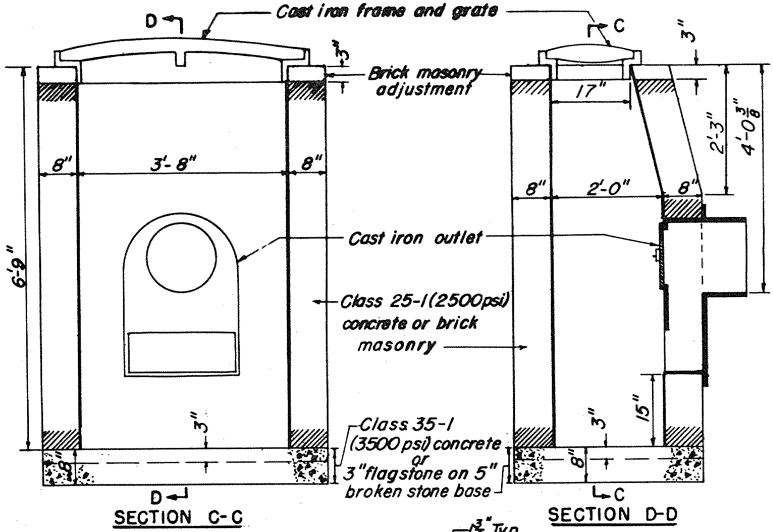
SECTION B - B



SUPPORT BAR

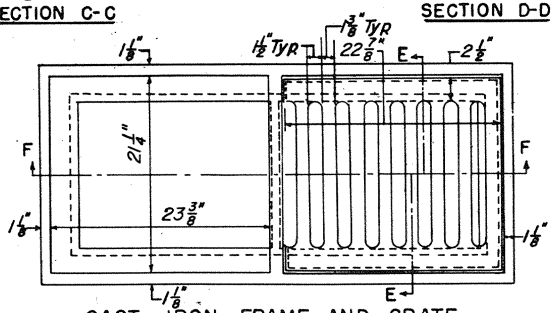
DETAILS OF CAST IRON FRAME AND SUPPORT BAR

Kenneth J. Fitzmaurice CHIEF DESIGN BRANCH Samuel S. Baxter COMMISSIONER & CHIEF ENGR.	**4FT. & 6FT. OPEN MOUTH GRATE INLET WITH PRECAST TOP** CITY OF PHILADELPHIA WATER DEPARTMENT	D-12.2B-1 DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 26

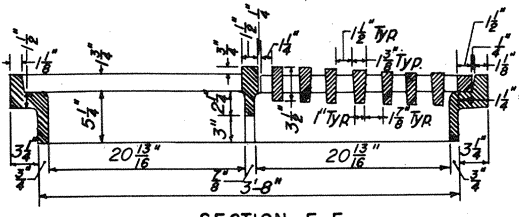


SECTION C-C

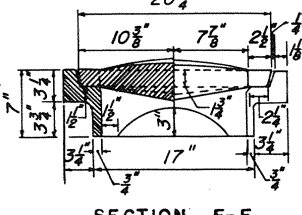
SECTION D-D



CAST IRON FRAME AND GRATE



SECTION F-F

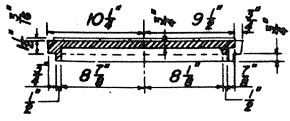


SECTION E-E

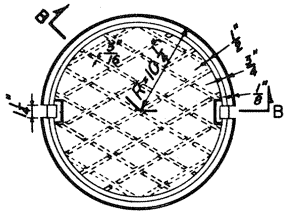
NOTES:

For details and dimensions of CAST IRON OUTLET see Drawing No. D-13.0-IC.
Inlet frame shall be cast iron ASTM A-48 class 30.
Plaster interior brickwork with 1:2 cement mortar 1/2" thick.
Flagstone shall be Scioto Valley stone, Mc Dermott Ohio.
Brick shall conform to ASTM C-32.
Outlet may be placed in any wall as required.

Kenneth J. Fitzmaurice CHIEF DESIGN BRANCH Samuel V. Boston COMMISSIONER & CHIEF ENGR.	**GRATE INLET** CITY OF PHILADELPHIA WATER DEPARTMENT	D-12.3-1 DRAWING NO. JUNE 1, 1970 DATE PAGE NO. 27

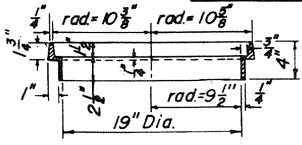


SECTION B-B

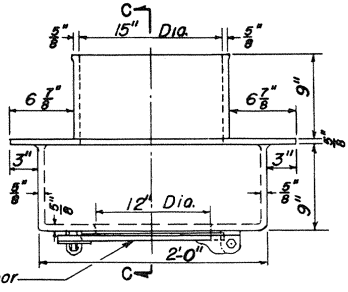


BOTTOM VIEW

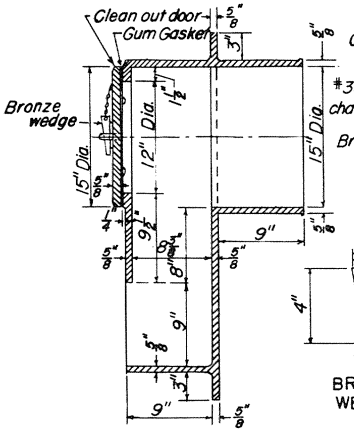
DETAIL OF CAST IRON COVER



DETAIL OF CAST IRON FRAME

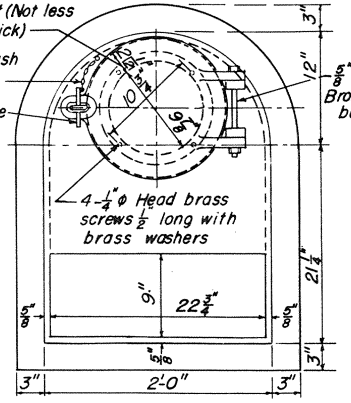


PLAN



SECTION C-C

BRONZE WEDGE



REAR ELEVATION

DETAIL OF CAST IRON OUTLET

Notes:
Cast iron shall conform to ASTM A-48 class 30.

Kenneth J. Zitomer
CHIEF DESIGN BRANCH

Samuel S. Baxter
COMMISSIONER & CHIEF ENGR.

INLET CASTINGS

CITY OF PHILADELPHIA WATER DEPARTMENT

D-130-IC
DRAWING NO.
JUNE 1, 1970
DATE
PAGE NO. 28